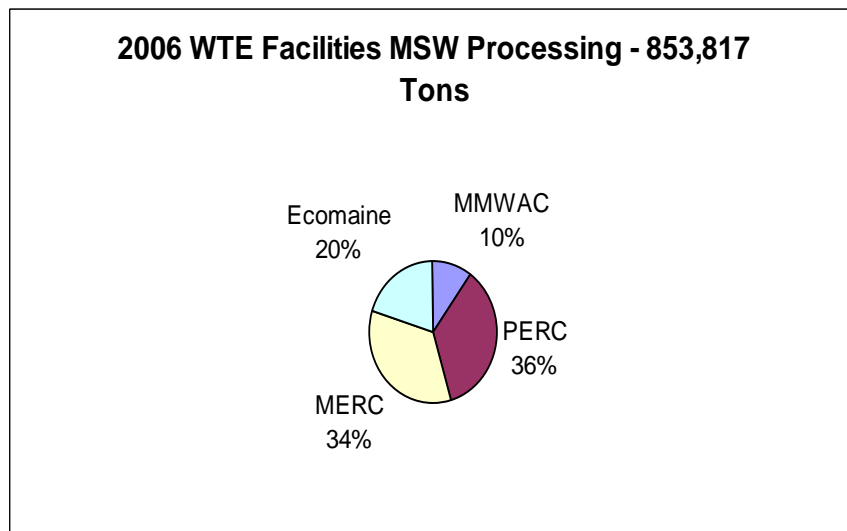


Waste-To-Energy Facility ‘Talk’ - 2006

An Overview



853,817 tons of municipal solid waste (MSW) was managed by these four waste-to-energy facilities* in 2006

* MWWAC = Mid-Maine Waste Action Corporation, Auburn
ecomaine = ecomaine (former Regional Waste Systems), Portland
MERC = Maine Energy Recovery Corporation, Biddeford
PERC = Penobscot Energy Recovery Company, Orrington

Waste To Energy Facility ‘Talk’ - 2006

Introduction

The four Waste to Energy (WTE) facilities report annually to the State Planning Office, and include information on sources of municipal solid waste delivered, disposition of residues, income, expenses, average tip fees and related information. The data and conclusions within this report are based upon the reports submitted to this office for the year 2006. We appreciate the support received from the facilities in not only providing this data, but for assisting in the review of this document.

Summary of Waste-to-Energy (WTE) Facility Operations for 2006

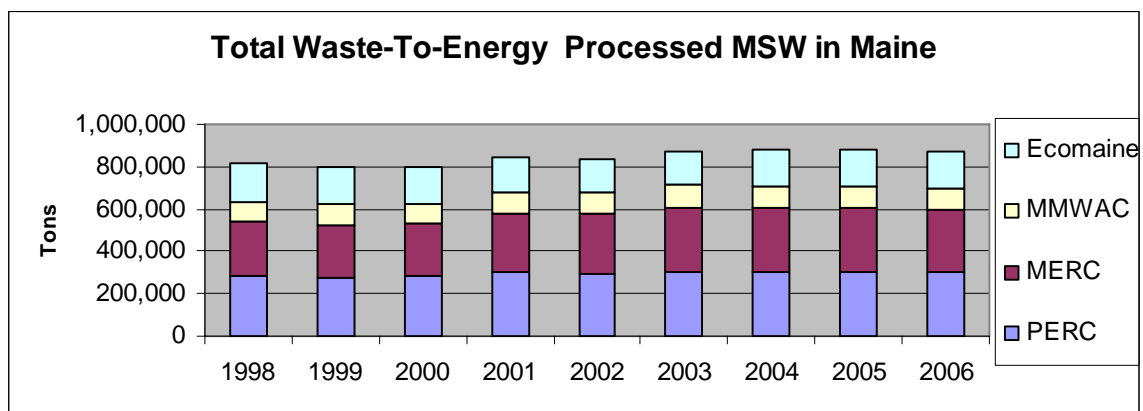
- Maine WTE facilities processed 853,817 tons of municipal solid waste (MSW)
- Maine municipalities delivered 359,198 tons of MSW
- Maine businesses delivered 328,824 tons of MSW
- 165,795 tons of the total delivered MSW was imported
- WTE processing and incineration generated 327,695 tons of residues that were landfilled
- WTE facilities received incomes of \$104,087,018: \$63,782,220 from tipping fees charged by the facilities; and, \$40,304,798 from the sale of electricity generated by the combustion of municipal solid waste

Overview of Facilities Operations

Since 1998, the four Waste-To-Energy (WTE) facilities in Maine have processed an average of between 800,000 and 900,000 tons per year of municipal solid waste that has been generated in both Maine as well as delivered from out-of-state sources. The facilities/incinerators consumption of municipal solid waste (MSW) has been relatively constant through this time frame (Figure 1).

Figure 1

Annual Consumption of MSW by Maine's Four WTE Facilities



In 2006, **853,817 tons** of MSW were received and processed by Maine's four WTE facilities (Table 1).

Table 1

2006 Waste-to-Energy Facilities' Sources of MSW

| WTE Facility | Maine Municipally Managed | Maine Commercial | Imported Commercial | Total Tons |
|--------------|---------------------------------|---------------------|------------------------|---------------|
| MMWAC | 44,207 | 40,491 | | 84,698 |
| PERC | 212,326 | 58,541 | 29,323 | 300,190 |
| MERC | 73,487 | 84,721 | 136,472 | 294,680 |
| ecomaine | 69,926 | 104,323 | | 174,249 |
| | 399,946 | 288,076 | 165,795 | 853,817 |

In 2006, **853,817 tons** of MSW were delivered to Maine's four WTE facilities. **695,122 tons** were combusted, creating **169,000 tons** of ash that was landfilled. **158,695 tons** (18.2%) of the MSW delivered to the WTE facilities was diverted to landfills for disposal as either 'Bypass' or 'Front End Process Residue' (FEPR). Landfilled ash constituted 20% of the MSW delivered to the WTE facilities.

22,044 tons of metal were extracted from the MSW and recycled.

In 2006, a total of **327,695 tons** (38.5%) of residues generated by the WTE facilities were landfilled. (Table 2 and Figure 2).

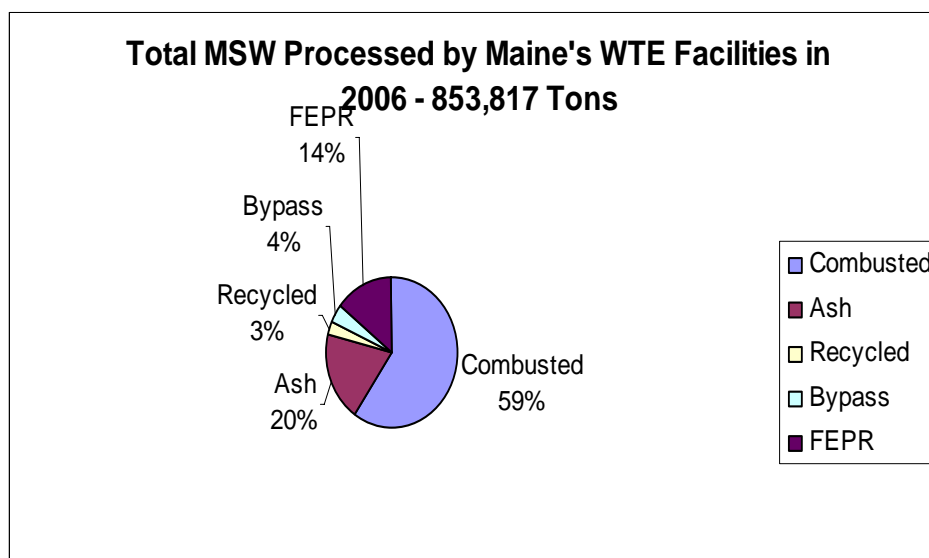
Table 2

Final Disposition of MSW Processed by WTE facilities in 2006

| WTE Facility | Combusted | Ash – Landfilled | Post Burn Metal - Recycled | Bypass - Landfilled | Front End Process Residue | Total In Tons |
|--------------|----------------|------------------|----------------------------|---------------------|---------------------------|----------------|
| PERC | 181,081 | 54,373 | 9,724 | | 55,012 | 300,190 |
| MERC | 151,698 | 51,383 | 8,292 | 17,129 | 66,178 | 294,680 |
| MMWAC | 48,439 | 18,456 | 1,768 | 16,035 | | 84,698 |
| ecomaine | 122,860 | 44,788 | 2,260 | 3,019 | 1,322 | 174,249 |
| | | | | | | |
| | 504,078 | 169,000 | 22,044 | 36,183 | 122,512 | 853,817 |

Figure 2

Final Disposition of MSW Processed in 2006

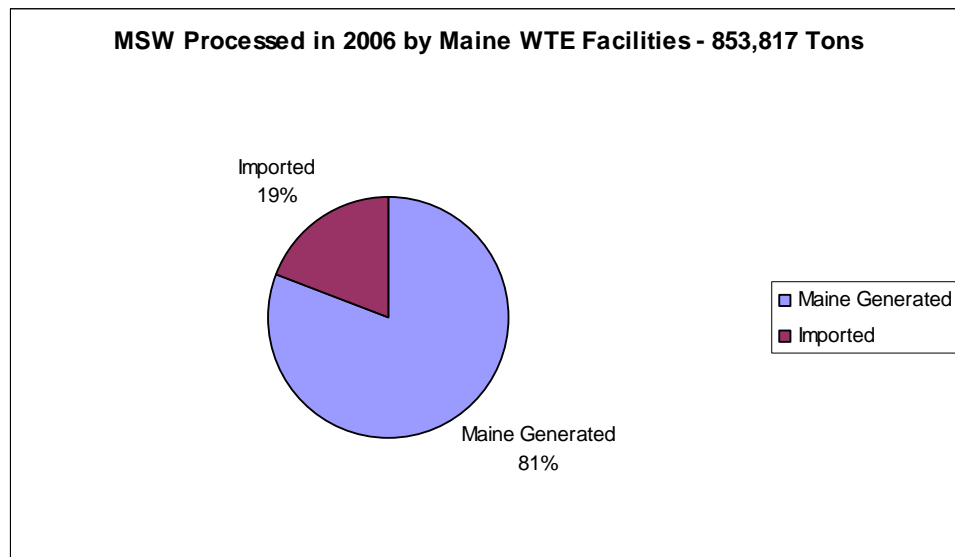


Maine Generated Municipal Solid Waste (MSW) and Imported MSW

In 2006, **165,795 tons** of MSW were imported by Maine's WTE incinerator facilities (refer to Table 1, page 2). In 2006, Maine's municipalities and businesses generated **688,022 tons** of MSW that was delivered to Maine's WTE incinerator facilities (Figure 3), resulting in 81% of the MSW managed by Maine's four WTE facilities was generated in Maine.

Figure 3

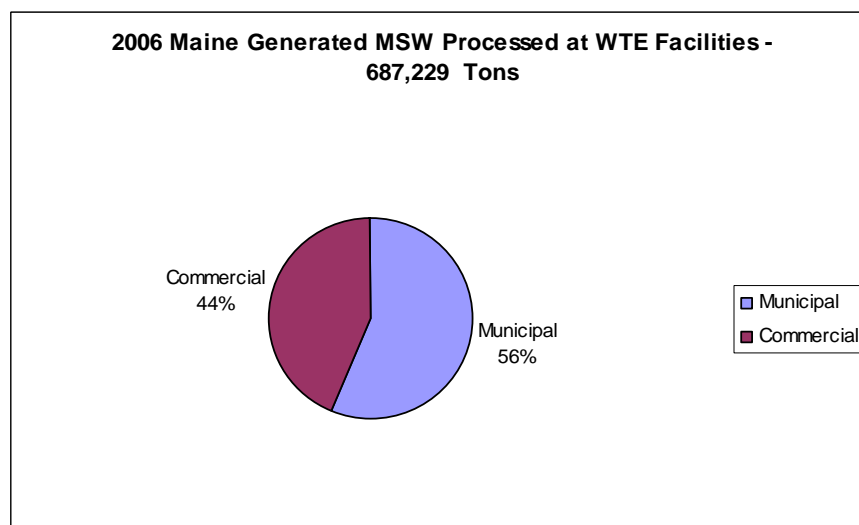
Source of MSW Received by and Processed at WTE Facilities in 2006



687,229 tons of MSW were generated by Maine municipalities and businesses in 2006 and processed by WTE facilities (Figure 4).

Figure 4

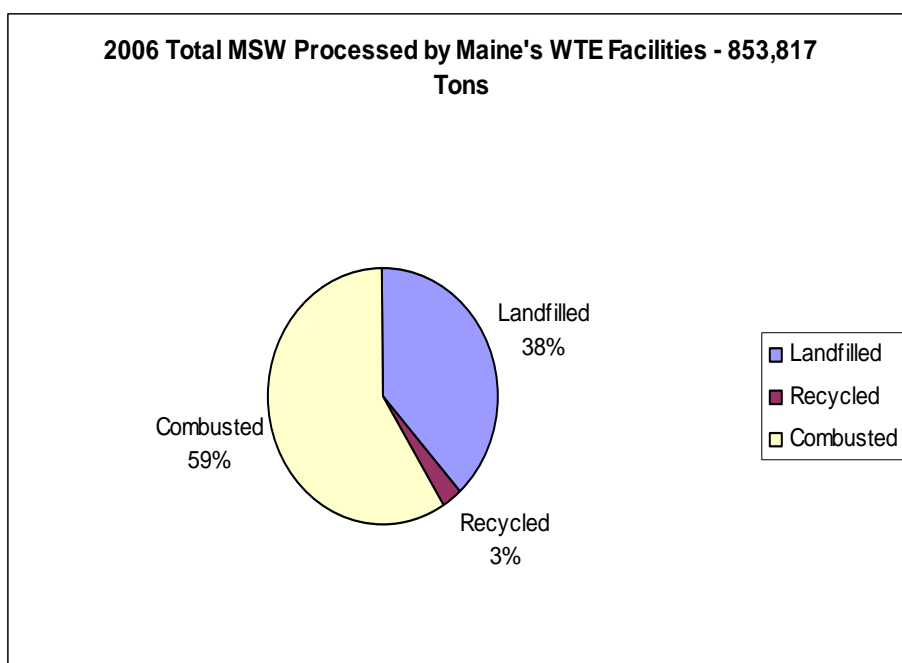
Source of Maine Generated MSW Delivered to WTE Facilities



In 2006, a total of **504,078 tons** of MSW were actually combusted (60% of the intended, delivered tonnage), and **327,695 tons** (38%) were landfilled (Table 2, page 4, and Figure 5, below). **22,044 tons** of metal were recycled by the WTE facilities from Maine generated MSW.

Figure 5

Final Disposition of WTE Processed MSW



Maine Generated MSW Delivered to WTE Facilities

399, 946 tons of Maine generated MSW that were shipped to WTE facilities were billed to municipal accounts for payment. Typically, the delivering municipality or hauler is responsible for paying the tipping fee (disposal fee) at the receiving waste to energy facility. However, there are five PERC and two MERC municipalities that are billed by the WTE facility for the commercially collected MSW generated in their community that is delivered to that WTE facility. These five communities utilize an accounting technique of “back-billing” the commercial accounts for the disposal costs related to the MSW they generated. (Table 3) To obtain the correct municipal tonnage of MSW, the “back billed” tonnages should be subtracted from the initial municipal collection total to give the municipal MSW generation (**399,946 tons** minus **42,921 tons** = **357,025 tons of municipally managed MSW**).

Table 3

Commercially Generated MSW that is “back-billed” (in tons)

| | |
|--------------|---------------|
| Bangor | 24,637.07 |
| Brewer | 3,818.42 |
| Old Town | 2,260.4 |
| Orono | 1,315 |
| Saco | 2,892 |
| Biddeford | 7,998 |
| Total | 42,921 |

288,076 tons of Maine generated MSW were collected and recorded at WTE facilities as commercial waste. When **42,921 tons** of “back-billed” commercial waste is added to **288,076 tons**, this equals a total of **330,997 tons of MSW**.

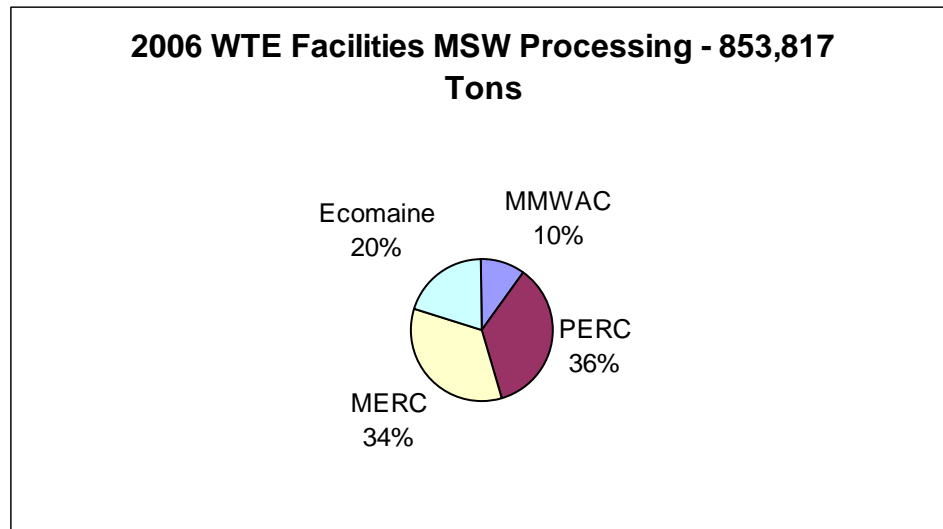
In addition, **2,173 tons** collected municipally in Warren (1,259.3 tons) and Sebago (913.71 tons) that were both trucked to MERC were reported at MERC as commercial MSW, but were actually municipal tonnages. Thus, **2,173 tons** needs to be subtracted from the above **330,997 tons** of actual commercial waste = **328,824 tons of actual tons of Maine commercial MSW sent to WTE facilities**.

A corresponding adjustment needs to be made to the municipally recorded and collected MSW. **2,173 tons** needs to be added to the 357,025 tons of adjusted municipal collection to = **359,198 actual tons of Maine municipal MSW sent to WTE facilities**.

Summary of Maine's Four Waste To Energy Facilities

The amount of MSW received and processed by each of Maine's four WTE facilities ranges from 10% to 36% of the total **853,817 tons** processed (Figure 6).

Figure 6



Total Maine Generated MSW – Combusted, Recycled & Landfilled through the four Waste to Energy Facilities

In 2006, Maine generated **688,028 tons** of MSW that was processed at the four WTE facilities in Maine.

A total of **504,078 tons** of Maine generated MSW were actually combusted. **327,695 tons** (37%) were landfilled (**169,000 tons** of ash, **36,183 tons** of bypass, and **122,512 tons** of Front End Process Residue). Front End Process Residue, referred to *FEPR*, is a by-product of the waste processing technique used by Maine Energy Recovery Corporation and Penobscot Energy Recovery Company. **22,044 tons** of metal were recycled by the WTE facilities from Maine generated MSW.

688,028 tons of Maine generated MSW were initially processed at WTE facilities.

Maine's Four Waste-to-Energy Facilities

A Brief Description of Each Facility and It's Operations

Mid-Maine Waste Action Corporation

Mid-Maine Waste Action Corporation (MMWAC) in Auburn serves 27 towns and regions comprised of 33 towns that include 10.8% of Maine's population. MMWAC has collected an increasing amount of trash during the past ten years.

In 2006, MMWAC received **44,207 tons** from municipal accounts, and **40,491 tons** from commercial accounts for a total of **84,698 tons** (this total includes **1,768 tons** of post burn metal that was recycled (Table 4 and Figure 7).

16,035 tons of MSW was bypassed and landfilled at Waste Management's *Crossroads Landfill*, located in Norridgewock.

MMWAC operates a bulky waste transfer station that management is contracted to Waste Management. In 2006, **11,093 tons** of Oversized Bulky Waste was collected and transferred for landfilling at Waste Management's Crossroads Landfill in Norridgewock. The 11,093 tons of Oversize Bulky Waste are not included in the figures in this report.

MMWAC burns 200 tons of MSW in a twenty-four cycle, or 8.3 tons per hour. MMWAC typically is shut down yearly for about two weeks for annual maintenance.

MMWAC also serves the Lewiston-Auburn area as a CDD transfer station.

Since 2001, MMWAC has been managing just over a total of 100,000 tons per year (Figure 8).

Table 4

MMWAC's 2006 MSW Processing Numbers

| Tons of MSW Reduced through Combustion | By Pass - Landfilled | Post Burn Metal - Recycled | Ash - Landfilled | Total in Tons |
|---|---------------------------------|---|-----------------------------|--------------------------|
| 48,439 | 16,035 | 1,768 | 18,456 | 84,698 |

Figure 7

MMWAC's 2006 MSW Processing Summary

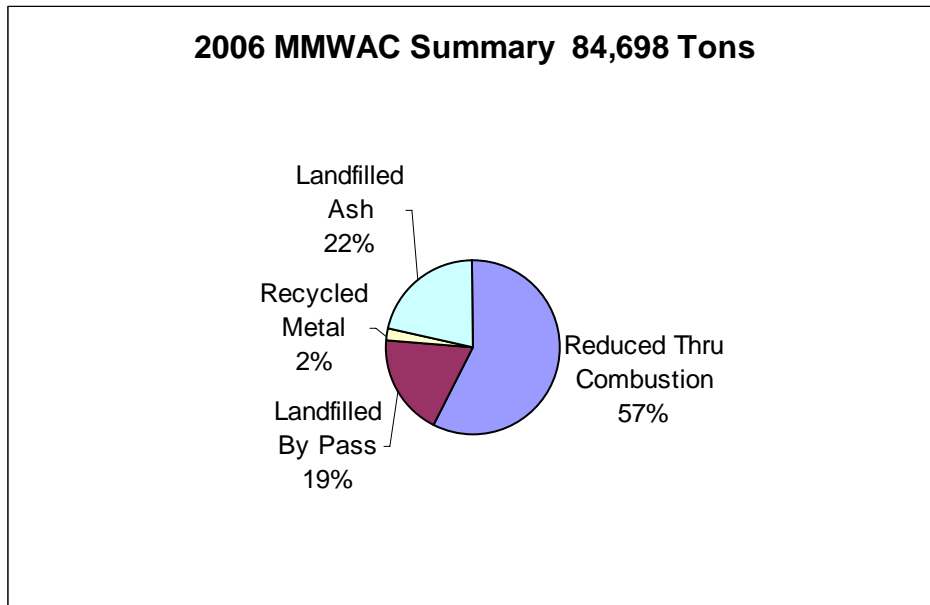
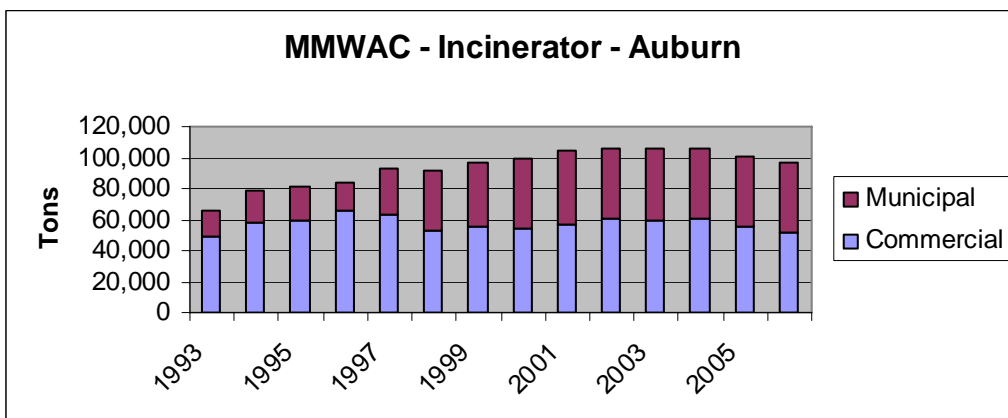


Figure 8

History of MMWAC's Annual Processing of MSW (in Tons)



ecomaine

ecomaine serves 28 communities comprising 18.7% of Maine's population. About one-half of its trash is commercial from area businesses, apartment buildings and private residents with dumpsters. In 2006, **ecomaine** received and processed **174,249 tons** of MSW (Table 5 and Figure 9). Since, 1993, **ecomaine's** consumption of MSW has varied (Figure10). **ecomaine's** two burners combust between 500 – 550 tons per 24 hour, or between 20 to 23 tons per hour. **ecomaine** typically is shut down yearly for about one week, for annual maintenance.

Table 5

ecomaine's 2006 MSW Processing Numbers

| Reduced through Combustion | Metal Recycled | Bypass - Landfilled | Ash - Landfilled | Total in Tons |
|----------------------------|----------------|---------------------|------------------|---------------|
| 122,428 | 2,260 | 4,773 | 44,788 | 174,249 |

Figure 9

ecomaine's 2006 MSW Processing Summary

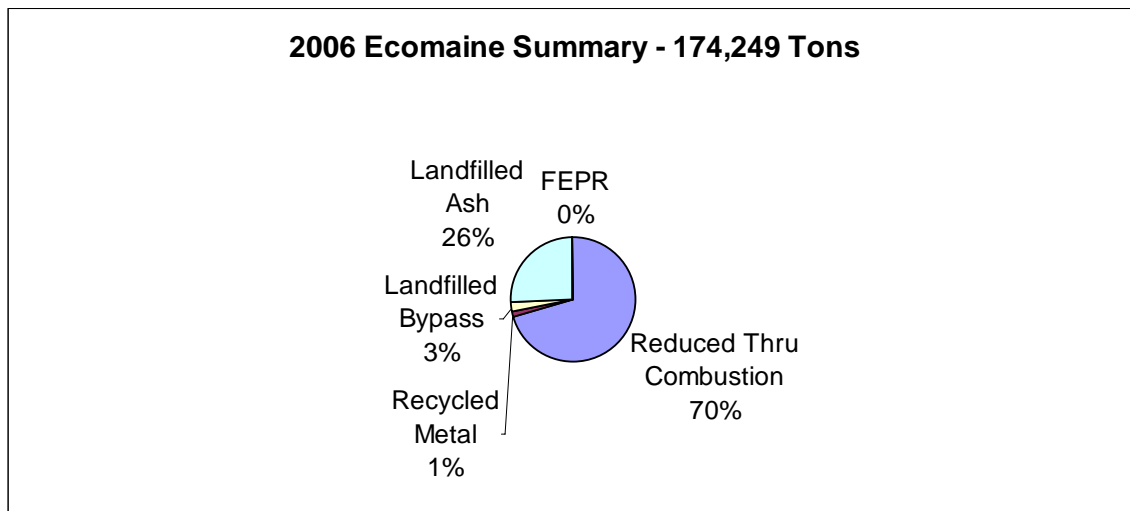
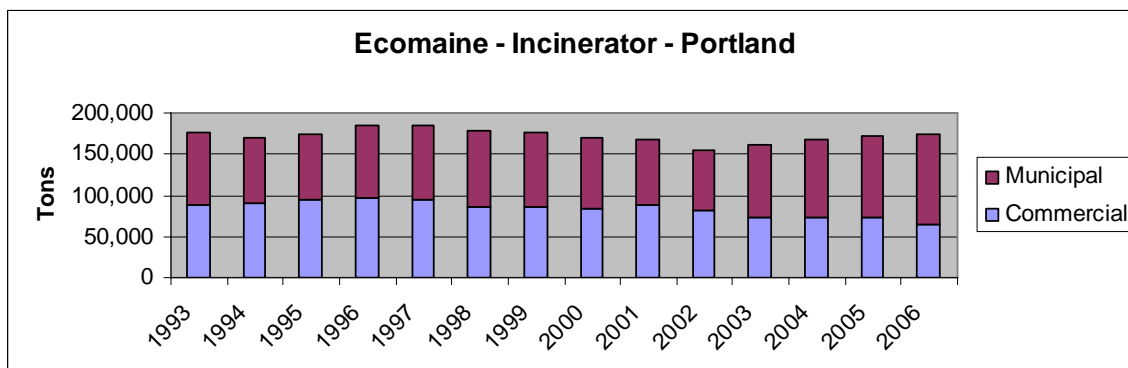


Figure 10

History of ecomaine's Annual MSW Processing (in Tons)



Penobscot Energy Recovery Company

Penobscot Energy Recovery Company (PERC) serves 210 towns that include 26.4% of Maine's population. Historically, between 10% to 20% of PERC's incoming MSW is imported from out-of-state sources. In 2006, **29,323 tons** were imported. In 2006, PERC received **300,190 tons** of MSW (Table 6 and Figure 11). Since 2001, PERC's consumption of MSW has been around 300,000 tons per year (Figure 12).

PERC processes between 1,000 to 1,100 tons in a twenty-four hour cycle, or about 42 tons per hour. PERC typically is shut down yearly for about one week, for annual maintenance.

Table 6

PERC's 2006 MSW Processing Numbers

| Reduced through Combustion | Ash - Landfilled | Metal - Recycled | Non-Processibles - Landfilled | Front End Process Residue - Landfilled | Total in Tons |
|----------------------------|------------------|------------------|-------------------------------|--|---------------|
| 181,081 | 54,373 | 9,724 | 8,631 | 46,381 | 300,190 |

Figure 11

PERC's 2006 MSW Processing Summary

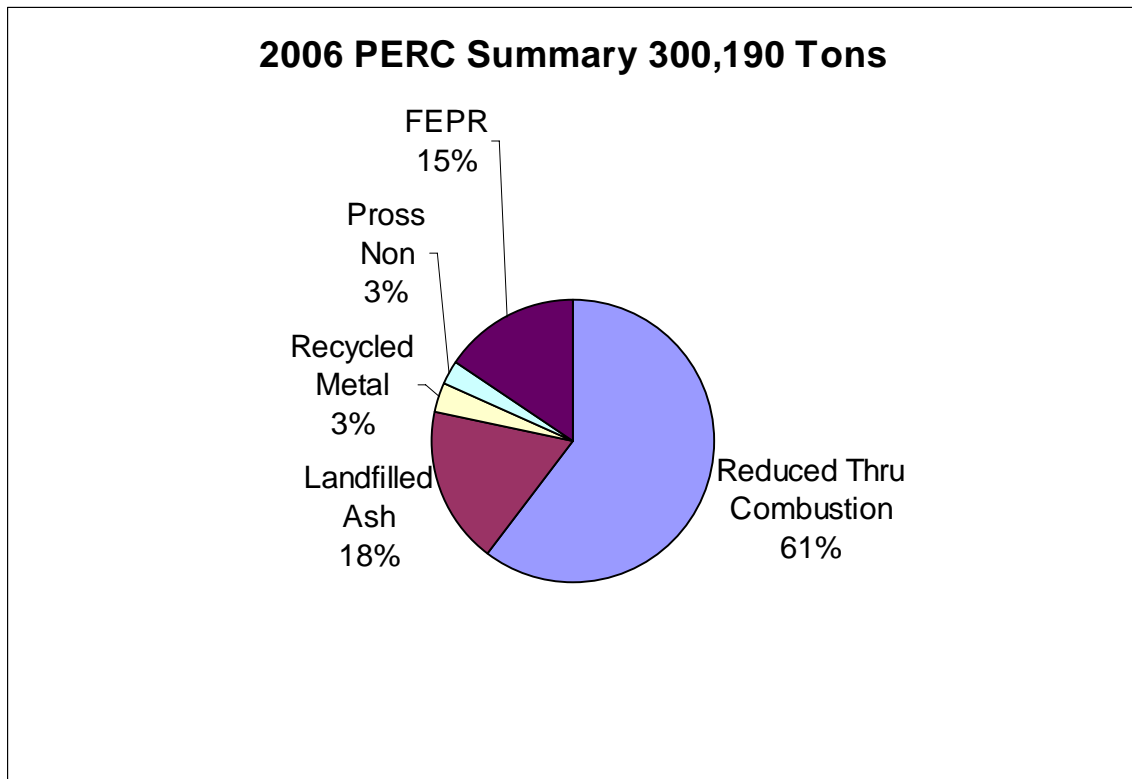
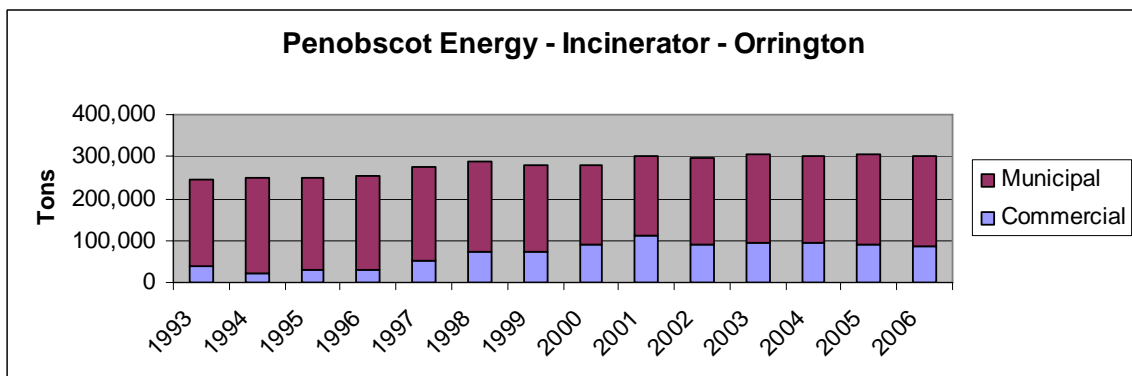


Figure 12

History of PERC's Annual MSW Processing (in Tons)



Maine Energy Recovery Corporation

Maine Energy Recovery Corporation, (referred to as either MERC or Maine Energy), in Biddeford serves 36 towns that include 14% of Maine's population. In 2006, Maine Energy imported **136,472 tons** from out-of-state sources, representing about forty six percent (46%) of the MSW received at the incinerator. In 2006, MERC processed **294,680 tons** of MSW (Table 7 and Figure 13). Since 1993, MERC has increased its consumption of MSW (Figure 14). MERC's boilers burn an average of 40 tons per hour. MERC typically is shut down yearly for about one week, for annual maintenance.

Table 7

Maine Energy's 2006 MSW Processing (in tons)

| Reduced Through Combustion | Ash - Landfilled | Metal - Recycled | Bypass-Landfilled | Front End Process Residue | Total - tons |
|----------------------------|------------------|------------------|-------------------|---------------------------|----------------|
| 151,699 | 51,383 | 8,292 | 17,129 | 66,178 | 294,680 |

Figure 13

Maine Energy's 2006 MSW Processing Summary

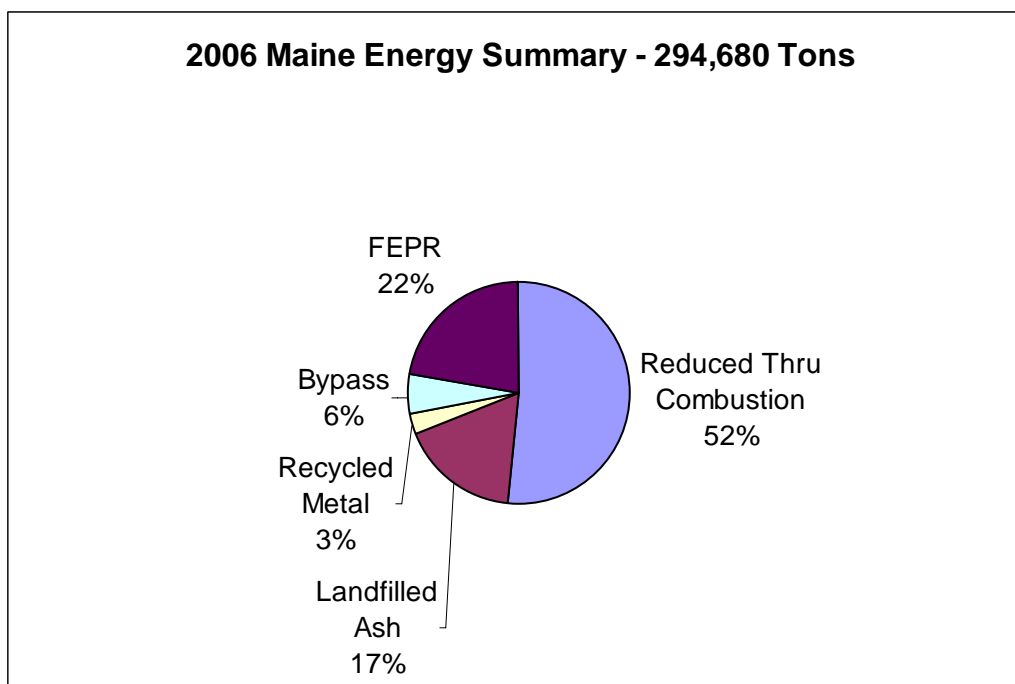
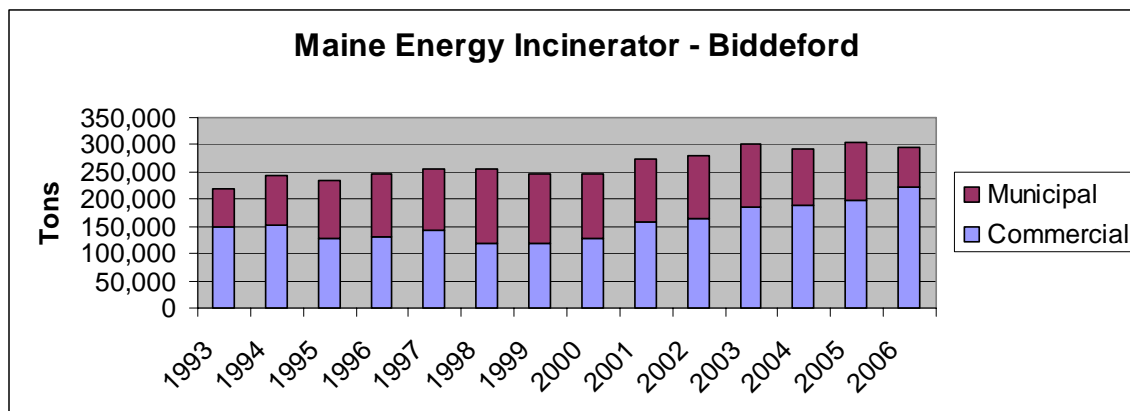


Figure 14

History of Maine Energy's Annual MSW Processing (in Tons)



WTE Income

Maine's four waste-to-energy (WTE) facilities derive most of their income from disposal fees (61%) and the sale of electricity (39%) (Table 8).

Table 8

Waste-to-Energy Facility Revenue Streams – 2006

| | Disposal Fees & Other Fees | Electricity Sales | Total Income |
|------------------|---|--------------------------|----------------------|
| PERC | \$17,795,218 | \$19,125,910 | \$36,921,128 |
| MMWAC* | \$5,936,670 | \$1,083,989 | \$7,020,660 |
| ecomaine* | \$21,624,287 | \$5,365,817 | \$26,990,104 |
| MERC | \$18,426,043 | 14,729,082 | \$33,155,126 |
| Total | \$63,782,220 | \$40,304,798 | \$104,087,018 |

* Fiscal Year July 2005 to June 2006